

Determination of the polynomial uniformizing a given compact Riemann surface

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Abstract

An approximate method for finding the polynomial uniformizing a given Riemann surface is proposed. The method is based on joining this surface with another surface by a smooth curve in the space of branched coverings of the Riemann sphere for which the uniformizing polynomial is known. The critical points of the required polynomial are found by using the solutions of the Cauchy problem for the system of ordinary differential equations. © 2012 Pleiades Publishing, Ltd.

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Keywords

branched covering, Cauchy problem, Riemann sphere, Riemann surface, uniformizing polynomial